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INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER
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HARPER, LEON JONATHAN

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

**MAILED**

**JAN 23 2008**

**Technology Center 2100**

Application Number: 10/814,715  
Filing Date: March 31, 2004  
Appellant(s): SHAN ET AL.

Leroy D. Maunu Reg. No 35,274  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/22/2007 appealing from the Office action mailed 4/6/2007.

**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6763350

Agrawal et. al

6-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,8,18,25,are rejected under 35 U.S.C. 102(e) as being anticipated by US 6763350 (hereinafter AG).

As for claim 1 AG discloses: determining a number of rows in a vertical database table and a number of columns in a horizontal database table (See column 5 lines 10-25), wherein the vertical table includes at least three columns, with entries in a first column containing object identifiers (See column 4 lines 57-64), entries in a second column containing attribute names corresponding to the object identifiers (See column 4 lines 57-59), and entries in a third column containing attribute values corresponding to the attribute names (See column 4 lines 57-59), and the horizontal table includes a column for the object identifiers and attribute columns for the attributes names (See column 4 lines 60-64); selecting one of a plurality of methods for reading data from the vertical database table and writing data to the horizontal database table based in part

on the number of rows in the vertical database table and the number of columns in the horizontal database table (See column 5 lines 10-15); and reading object identifiers and values of attributes from the vertical database table and writing the object identifiers and the values of attributes to the vertical database table using the selected one of the plurality of methods (See column 5 lines 10-30 and Tables 2,3).

As for claim 8, the rejection of claim 1 is incorporated, and further AG discloses: wherein access to the vertical database table and access to the horizontal database table are provided by a database management system (See column 1 lines 15-20), the method further comprising: in response to selection of a first one of the plurality of methods, generating a single SQL command that selects data from the vertical table and inserts the data in the horizontal table for each object identifier in the vertical table and each column in the horizontal table (See column 4 lines 50-54); and issuing the SQL command to the database management system (See column 5 lines 15-22 note: the v2h command is made up of sql commands).

Claims 18 and 25 are program storage medium claims corresponding to the methods of claims 1 and 8 respectively, and are thus rejected for the same reasons as set forth in the rejection of claims 1 and 8.

**(10) Response to Argument**

This Examiner's answer will address the arguments in the order in which they appear in the appeal brief. Examiner explicitly relies on the second reason given as supporting that Agrawal discloses selecting one of a plurality of methods based in part on the number of rows in the vertical database table and the number of columns in the horizontal database table.

**Argument (claims 1,8,18, and 25)**

Since neither the cited portions nor other un-cited portions of Agrawal suggest the claim limitations of selecting one of a plurality of methods based in part on the number of rows in the vertical database table and the number of columns in the horizontal database table, the rejection is unsupported and should be reversed.

The second reason given by the Examiner to support his assertion is that "the disclosure of the v2h function is the preferred embodiment of [Agrawal's] invention, and any artisan of ordinary skill in the pertinent art when looking at claims 3 and 4 (keeping in mind the concept of claim differentiation) would see that it is unequivocally clear that a plurality of functions to convert vertical databases to horizontal databases were disclosed." However, when claim 5 is considered along with claims 3 and 4, there is no apparent inference of multiple functions to convert a vertical database into horizontal database.

Agrawal's claim 3 depends from claim 2 which depends from claim 1. Claim 1 sets forth a step of "transforming the query to render a transformed query." Claim 2 sets forth that "the query is transformed using at least one operator." Claim 3 sets forth that

"the operator receives at least one vertical table ... and outputs the logical horizontal table." Claim 4 depends from claim 3 and sets forth that "the operator is a v2h operator." Claim 5 also depends from claim 3 and sets forth that "the operator executes a left outer join of a projection ... of identifiers of the vertical table with a sequence of left outer joins of a set of projections of attribute values from the vertical table."

In response to argument examiner respectfully submits that examiner used the concept of claim differentiation to explain that the disclosure of the v2h function is the preferred embodiment of the present invention, and any artisan of ordinary skill in the pertinent art when looking at claims 3 and 4 would see that it is unequivocally clear that a plurality of functions to convert vertical databases to horizontal databases were disclosed. Claim 3 states that an operator receives a vertical table with attribute names as input and outputs the horizontal database. Claim 4 further defines said operator by stating that the operator is the v2h operator. If however, only the v2h operator was disclosed then these would be duplicate claims, for that reason claim 3 **must** cover more than just the single v2h operator (this is the concept of claim differentiation) and any artisan of ordinary skill in the pertinent art reading claims 3 and 4 would have realized that there are a plurality of functions to convert vertical databases to horizontal databases, and the v2h is just a preferred embodiment.

Applicant has argued that the "operator" in claim 3 can be either a V2h operator or an "left outer join" operator and states that both are alternatives for the operator of claim 3. This logic is incorrect because applicant's claim interpretation is (a) contrary to

both the plain language of the claim and the claim in light of the specification and (b) even if applicants claim interpretation is correct, applicant's interpretation only reinforces the instant argument made by examiner.

Applicant's interpretation is contrary to the plain language of the claims in the Agrawal reference. Claim 3 defines an operator that converts a vertical table to a horizontal table. Claim 4 further defines the operator by stating in part "wherein the operator is a v2h operator." Applicant then interprets claim 5 as further defining the operator as a join operator, however while claim 5 does depend upon claim 3 claim 5 states in part "and the operator executes a left outer join of a projection of distinct object identifiers of the vertical table with a sequence of left outer joins of a set of projections of attribute values from the vertical table." The plain language of claims 3,4, and 5 clearly establish that claim 3 defines conversion operators, claim 4 defines one of the operators, and claim 5 defines what the operator must execute with respect to that particular embodiment defined as the totality of claims 1+2+3+5. Moreover, once the claims are read in light of the specification it becomes unequivocally clear that examiners interpretation is the only reasonable interpretation of the claims. Agrawal discloses that operations include well known algebraic operations such as select, join, left outer join, as well as created operations such as v2h and h2v (See Agrawal column 4 lines 50-57). Agrawal then continues to disclose that the v2h operator converts a vertical table to a horizontal table (See Agrawal column 5 lines 10-13) while the  $\Omega^k(V)$  operator creates a horizontal table of arity  $K+1$  (where  $k$  is an integer). Moreover in column it is stated that horizontal views can be created with the v3h operator or without



(See Agrawal column 6 lines 43-47). Lastly Agrawal discloses that a section process may be used to get certain attributes into horizontal tables while excluding other, this means that for K attributes a user may create (k chose x) different tables. Therefore when reading the specification and the claims of Agrawal it becomes clear that the operators may be any of the well known algebraic operations and the related operations and any of them are fair game for converting tables. The embodiment of claim 4 requires that the operator be a v2h operator while claim 5 does not require any particular type of operator, however it does require that the operator execute inter alia a left outer join.

Even if applicants interpretation of the claims in Agrawal are correct the assumption only reinforces the logic followed by examiner. Applicant argues that "Agrawal's claim set forth two alternatives for the operator in claim 3" (See Brief page 7). However the operator of claim 3 is an operator that converts a vertical database to a horizontal database (See language of claim 3). Claim 4 consist of the combination of claims 1+2+3+4 while claim 5 consist of the limitations from claims 1+2+3+5 Therefore if applicant is correct then a v2h operator would convert a vertical database to a horizontal database and a left outer join would convert a vertical database to a horizontal database, meaning there would be at least two choices for converting a vertical database to a horizontal database.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Application/Control Number:  
10/814,715  
Art Unit: 2166

Page 9

### Conclusion

Claims 1,8,18,25 are properly rejected under 35 U.S.C. §103(a). In light of the foregoing arguments, the Examiner respectfully request that the Honorable Board of Appeals sustain the rejections.

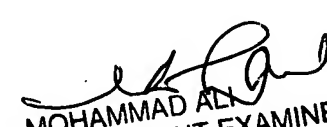
Respectfully submitted,

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Patent Examiner  
Art Unit 2166

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